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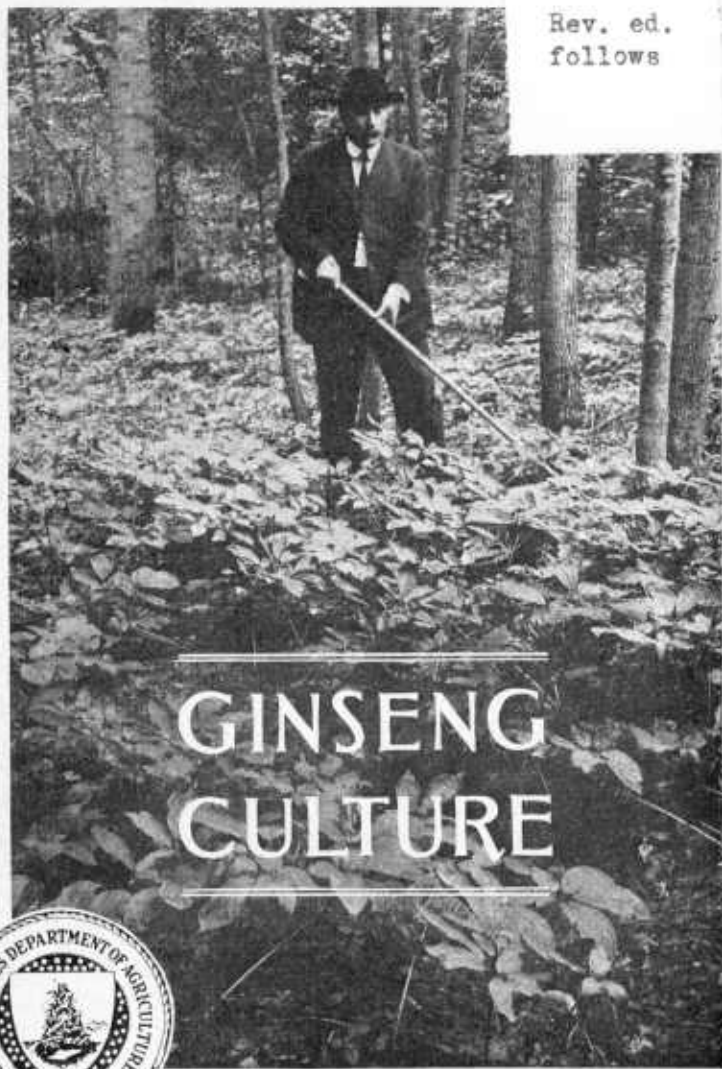
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GINSENG CULTURE



GINSENG is a fleshy-rooted herbaceous plant native to this country and formerly of frequent occurrence in shady, well-drained situations in hardwood forests from Maine to Minnesota and southward in the mountain regions to Georgia and the Carolinas.

When placed under culture ginseng should be shielded from direct sunlight by the shade of trees or by lath sheds. The soil should be fairly light and well fertilized with woods earth, rotted leaves, or fine raw bone meal. Seed should be planted in the spring, as early as the soil can be worked. Only cracked or partially germinated seed should be used. Ginseng needs little cultivation, but the beds should at all times be kept free from weeds and grass. A winter mulch over the crowns is usually essential.

The roots do not reach marketable size until about the sixth year from seed. When dug they should be carefully washed or shaken free from all adhering soil, but not scraped. Curing is best effected in a well-ventilated room heated to about 90° F. About a month is required to cure the larger roots.

The average value of the exports of ginseng from the United States for the last 10 years was more than \$2,000,000.

Ginseng production is a minor industry which affords an opportunity for profit to only a limited number of judicious growers.

GINSENG CULTURE¹

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INTRODUCTION

GINSENG is a native product of recognized importance. The export trade in dry roots has existed for more than a century and for the last 10 years attained an average value of more than \$2,000,000.

The natural production of ginseng, diminished by overcollection and the contraction of suitable forest areas, has dwindled to such an extent that prices have risen to levels warranting cultivation, which has proved successful in judicious hands. The plant, however, has little domestic value except for the exploitation of amateur cultivators and depends on a distant oriental market (China) for its standing as a commodity. As a commercial product it would appear particularly liable to overproduction, which danger, however, is greatly lessened by the slow development of the plant and the inherent difficulties of its cultivation.

Under the present conditions of production ginseng offers attractive possibilities to patient cultivators who appreciate the limitations of growth and the slow development of woodland plants in general and are willing to make a material outlay with only scanty returns in view for several years to come, but it holds out no inducement for inexperienced growers looking for quick profits from a small investment.

The culture of ginseng and of special crops generally is best begun in an inexpensive and experimental manner, enlarging the equipment only as reasonable success seems assured. "Plunging" in ginseng is likely to prove disastrous as in other forms of business.

¹ In this revision the writer has made free use of the helpful criticisms and suggestions received from a number of successful growers of ginseng.

THE GINSENG PLANT

American ginseng (fig. 1), botanically known as *Panax quinquefolium* of the family Araliaceae, is a fleshy-rooted herbaceous plant, growing naturally on the slopes of ravines and in other shady but well-drained situations in hardwood forests, in varying abundance

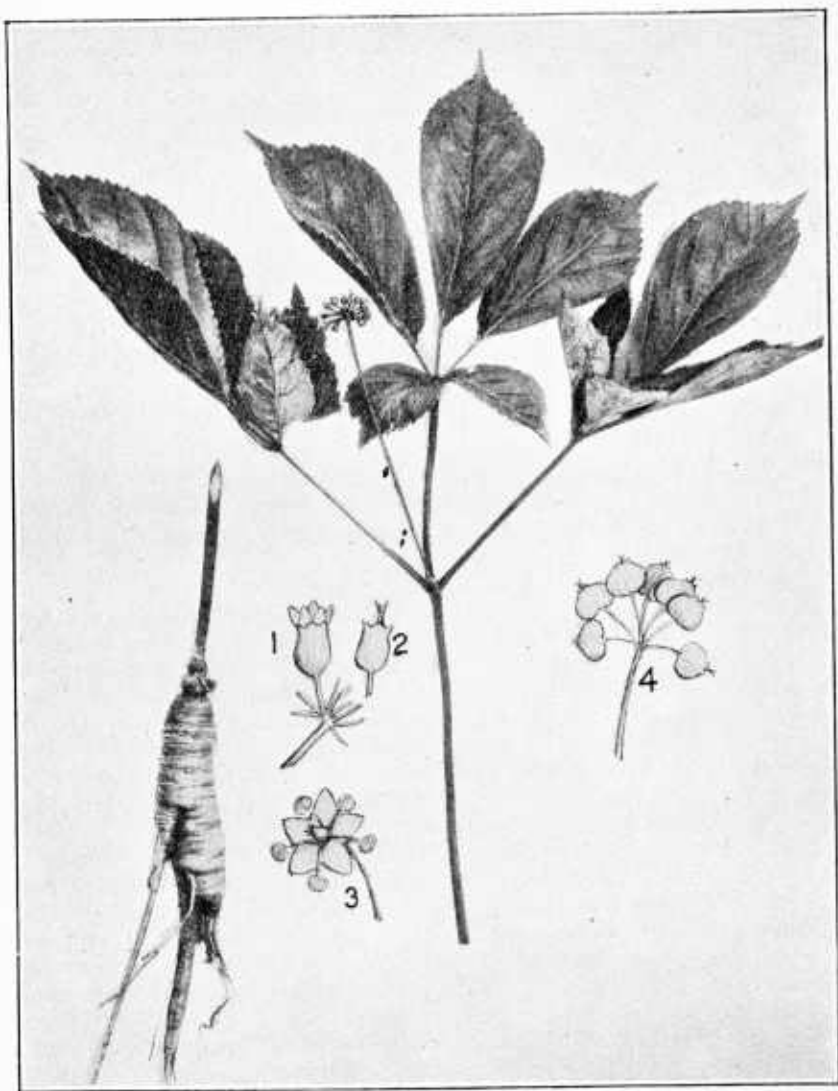


FIG. 1.—Branch, root, flower, and berries of American ginseng

from Maine to Minnesota and southward in the mountain regions to Georgia and the Carolinas. In its wild state it grows from 8 to 20 inches high, bearing three or more compound leaves, each consisting of five thin, stalked, ovate leaflets, pointed at the apex and rounded

or narrowed at the base, the three upper leaflets being larger than the two lower ones. A cluster of from 6 to 20 small greenish yellow flowers is produced in midsummer, followed by as many bright crimson berries, each containing from one to three flattish wrinkled seeds the size of small peas. The berries of northern ginseng rarely contain three seeds, but in southern ginseng berries containing three seeds are very common.

The root is thick, spindle shaped, 2 to 4 inches long, and one-half to 1 inch or more in thickness, in the older specimens generally branched and prominently marked with circular wrinkles. Branched roots of the wild Manchurian and Korean ginseng having some resemblance to the human form are said to be in particularly high favor in China, but this feature gives no special value to American ginseng.

The seeds (fig. 2) are slow in germination and should never be permitted to become dry. As soon as they are gathered they should be mixed with twice their bulk of moist sand, fine loam, sawdust, or woods earth, and stored in a damp, cool place until they are planted. As a rule the seeds do not germinate until a year from the spring following their ripening, and this fact must be borne in mind in purchasing seed for planting.



FIG. 2.—Seeds of American ginseng. (Natural size)

Ginseng seedlings grow about 2 inches high the first year, with three leaflets at the apex of the stem. The second-year plants may reach a height of 5 or 6 inches, bearing two compound leaves, each composed of five characteristic leaflets. A third leaf is generally added the next year, when fruits may be expected. In succeeding years a fourth leaf is formed and the fruiting head reaches its maximum development. A single plant of southern ginseng sometimes produces as many as 300 seeds, but northern ginseng very rarely produces more than 100 seeds to the plant and the average under cultivation seldom exceeds 40.

VARIETIES

There are various recognizable geographical races of American ginseng, not all of which are of the same value to the grower. Plants from the northern range, particularly those indigenous to New York and Wisconsin, appear to possess the most useful characteristics and form the best basis for breeding stocks. Southern ginseng, though vigorous and forming roots of good size and shape, does not seed well at first in northern localities, but after a few years it becomes adapted to the climate and will mature seeds before

frost. Some of the western types have long, thin roots of undesirable character, and another local form, dwarf in growth, has small, round, and almost worthless roots. The beginner should endeavor to procure from reliable dealers the best commercial types of ginseng as a foundation for his breeding stock.

The culture of native ginseng has been too brief to induce varietal changes, but liberal fertilization and continual selection of seeds from individual plants having superior commercial characteristics will doubtless in the end favorably modify the wild type of plants.

SUITABLE SOILS

Soil and location are very important in the culture of ginseng, since it is a plant which grows naturally on the slopes of ravines and in other well-drained situations where the soil is formed from the acid leaf mold of hardwood forests. The soil should be naturally dry, fairly light, and in a condition to grow good vegetables without the addition of strong manure. An absolutely new soil with the best of natural drainage is to be preferred. Very sandy soil should be avoided, as it tends to produce hard, flinty roots of inferior value. Although almost any fairly good soil can be brought into a condition suitable for ginseng by proper treatment, the cost of satisfactory sterilization is usually heavy. In numerous cases the addition of leaf mold from hardwoods has given best results, since ginseng requires an acid soil. For seed beds the soil should be half woods earth free from fiber, and, if it is inclined to be heavy, enough sand should be added so that the mixture will not bake or harden even after heavy rains.

GROWING THE CROP

Before the diseases of ginseng became such a menace to the industry, practical growers advised the starting of ginseng plantings with both young roots and seeds. By planting roots 3 or more years old a moderate seed crop may be had the first year, and a stock of 1-year or 2-year roots set at the same time will start the rotation which is necessary to provide for a marketable crop of roots each year after the first crop is harvested. However, the grower who purchases roots for planting incurs the risk of introducing diseases into his bed, and it appears to be the better policy not to take chances with roots but to depend entirely upon seeds.

Ginseng seeds are advertised for sale by many of the older growers and are usually procurable at prices varying from 50 cents to \$1.50 per thousand. Seeds are often sold by weight, and it is estimated that 1 pound of average northern seed should produce 7,000 to 8,000 plants, and 1 pound of average southern seed 10,000 plants or more. Stratified seeds usually cost more than fresh seeds, but are regarded as far more satisfactory. Dealers almost invariably supply seed that is at least a year old unless new seed is specially requested. As the output of seeds is likely to become greater than is necessary to extend the plantation, it is well to restrict seed production by nipping the flower heads unless a good market for the seeds is assured. Roots gain more rapidly in size and weight if the plants are not permitted to seed.

PLANTING

Except in the far Northwest, ginseng seeds are best planted in the fall. If held until spring, growth may start before they can be planted, in which case many may be lost. Only cracked or germinated seeds should be used. They should be planted 8 inches apart each way in the permanent beds, or 2 by 6 inches in seed beds and transplanted when 2 years old to stand 8 inches apart. The seeds should be covered 1 inch deep with woods soil or old rotten hickory or basswood sawdust; that from pine or oak trees should not be used. The roots may be set in October or later in the fall so long as the soil is in suitable condition, the crowns being placed about 2 inches below the surface. The most approved distance to plant is 8 inches apart each way, when roots are to be grown until 7 years old in permanent locations.

Many planters round the surface of the beds, making the center several inches higher than the sides, since they find space for more plants on the curved than on the flat surface; but others claim that the possible injury from drought in very convex beds more than offsets this advantage. It is important, however, to have the beds well built up with centers high enough not to retain water after a rain. The paths or alleys should be much lower than the beds, and if they decline from one end to the other they will serve as surface drains during heavy rains. For roots the beds should be worked not more than 6 to 8 inches deep if on ordinary soil. Very heavy soils may be worked more deeply if necessary to obtain better drainage. Seed beds need not be deeply stirred, as it is not advisable to have them settle to any marked extent.

SHADING

Ginseng grows naturally in rather dense shade, and under cultivation it must be shielded from direct sunlight by some construction that will reduce the light to about one-fourth its normal intensity. When planted in open ground this may be accomplished by erecting sheds open on all sides, but covered at the top with lath or boards so spaced as to cut out nearly three-fourths of the sunlight. It is not advisable to use burlap or muslin for shading, since these materials interfere with the free circulation of the air. Denser shade is required in the South than in the North. The rule appears to be one-sixth sunlight in the latitude of Kentucky and somewhat less for the South, rising to one-fourth or more in Michigan and Wisconsin.

There are many methods of constructing shade, but the most common is to set posts firmly in the ground 8 feet apart each way and about 8 feet high above the ground. Scantlings 2 by 4 inches in size are nailed on top of the posts, running the long way of the shed. The shade is usually made in sections 4 by 8 feet long, using common 4-foot laths or slats nailed on strips 2 by 2 inches and 8 feet long. The laths should be spaced from one-fourth to one-half inch apart, according to locality, whether in the North or in the South. These sections of shading are laid on top of the 2 by 4 inch runners and so nailed to the posts that the laths run about north and south, thus giving the plants below the benefit of constantly alternating light and shade. (Fig. 3.) Owing to the high cost of lumber, some

growers advocate replacing the runners with No. 4 wire, which is run over the tops of the posts and securely fastened thereto.

In the construction of artificial shade it should be borne in mind that free ventilation is very necessary for ginseng. "The higher the shade the better" is a maxim worth following, since gardens with a free circulation of air are apparently less likely to become diseased.

Seed beds made under the regulation garden shade are often further protected by a rather low shade to avoid the washing out of the seeds by the drip from the laths. Poultry netting covered with brush, straw, litter, or burlap, made light in spring and denser as the sun gains power, answers very well. In seed beds made in the open and protected by a low shade alone the seedlings are very apt to damp off in warm wet weather.



FIG. 3.—Lath shed affording partial shade, well suited for growing ginseng, goldenseal, and other woodland plants

The beds for permanent planting under shade should be 4 feet wide and preferably should run east and west, being so placed that the drip will fall to a great extent in the paths. The sides may be of 12-inch boards set 8 inches or more in the ground to keep out moles and held in place with small stakes.

FERTILIZING

Several weighty arguments may be offered against the excessive use of fertilizers. Heavy feeding tends to lessen the resemblance of the cultivated root to the wild product and consequently reduces its value, since the root most closely resembling the wild in appearance and texture is now in strongest demand. Overfeeding also forces growth and thereby renders the plant less resistant to the attacks of disease. Lime and wood ashes have been used by many growers on

their ginseng beds, but either root rust or fiber rot has almost invariably followed their use. If lime is used at all it is well to apply it at least a year before planting. Serious leaf injury has followed the excessive use of nitrogenous fertilizers, and heavy applications of barnyard manure have also caused severe injury. Experienced growers are now recommending a good rich soil to start with and very moderate forcing.

The very best fertilizers are woods soil or rotted leaves 4 to 6 inches deep, well spaded in to a depth of about 8 inches, and fine raw bone meal well worked in, applied at the rate of 1 pound to each square yard. If barnyard manures are used they should be very thoroughly rotted, and in order to give the best results they should be worked in some months previous to planting the beds. Some practical growers advise against the use of animal manures or even a soil to which they have been heavily applied. Chemical fertilizers and wood ashes have been used, but as very injurious results have sometimes followed it is best, for the beginner at least, to depend on hardwood leaf mold, old rotted hardwood sawdust, and raw ground bone to enrich the soil.

CULTIVATING

Ginseng requires little if any cultivation, but grass and weeds should be kept out of the beds, and the surface of the soil should be scratched with a light tool whenever it shows signs of caking. Ordinarily one active man can easily care for about 2 acres of ginseng.

MULCHING

In accordance with natural conditions, a winter mulch over the crowns is essential, especially in northern localities. Seedling beds particularly require careful mulching to prevent heaving by frost.

Forest leaves held in place with poultry netting, light brush, or sawdust are best, but cornstalks stripped of the husks, bean vines, cowpea hay, buckwheat straw, or other coarse litter not containing weed seeds or material attractive to mice will answer the purpose. The mulch should not be placed in position until actual freezing weather is imminent, and it should be removed in spring before the first shoots come through the soil.

A mulch of 4 or 5 inches of leaves or their equivalent in litter is ample for the severest climate, and less is needed in the South. A light summer mulch of sawdust helps keep down weeds and prevents excessive loss of moisture in dry weather.

DRAINAGE

In laying out ginseng beds provision must be made for efficient drainage. The preferable location is on ground which has a gentle slope, but as natural drainage can not be depended upon always to remove excess water from beds, some type of underground drain must be employed. Very satisfactory results have been obtained by the use of clay or cement daintile in ginseng beds. A line of tiles should be placed under the center of each bed. The proper depth of the drain will vary with the character of the soil, and the size of the

tiles will depend upon the amount of rainfall. In general, if 3-inch tiles are used the drains should be placed 6 to 8 feet apart and $1\frac{1}{2}$ to 2 feet deep in clay and 3 to 4 feet deep in sand or gravel.

FOREST PLANTINGS

The earlier successes with ginseng culture were made with plantings in hardwood forests, and this method is still preferred by many growers when a suitable location is available. However, the yield from forest plantings is said to be about one-half that obtained under artificial shade, but on the other hand there is a large saving in the expense for labor and the cost of shading. Growers on the Pacific coast have found that ginseng can not be grown successfully under tree shade in that region.

In forest plantings the beds should be placed where the shade is continuous and fairly dense. The shade should be produced by tall, open-headed, hardwood trees rather than by undergrowth, to insure free circulation of air. Some experienced growers prefer to plant on land which slopes to the north, thereby providing good drainage, without which ginseng will not thrive, and the coolest location during the heat of the summer. The soil should be deeply plowed or spaded and all tree roots removed. The growth of these roots into the beds should be prevented by occasionally cutting around them with a sharp spade. A liberal quantity of leaf mold or well-decayed litter should be worked into the soil, and an application of bone meal raked into the surface will in most cases be a desirable addition. Ginseng may be planted closer under forest conditions than in garden culture, but in either case the closer the plants stand the greater is the danger from disease. The culture of forest beds is in all respects similar to that of beds under artificial shade, and the winter mulch should in no case be omitted.

PROTECTION

Owing to the comparatively high cost of ginseng plants and roots, the beds should be well protected by secure fences from the intrusion of wild or domestic animals and should also be securely guarded against theft, which is not uncommon with this high-priced product. Protection is especially needed with forest plantings, which should always be well inclosed. Moles may be controlled with suitable traps,² of which several kinds are on the market. Mice often cause great damage to ginseng, but they may be kept from the beds by wire netting of sufficiently close mesh set 12 to 18 inches in the ground.

DIGGING AND DRYING THE ROOT

The cured root is valued by the Chinese largely according to its size and maturity. The best qualities at proper age break with a somewhat soft and waxy fracture. Young roots dry hard and glassy and are regarded as less desirable. Very small young roots and root fibers often realize less than a dollar a pound, while those of the proper size and quality sell readily at top quotations. Undersized or

² See SCHEFFER, T. H. THE COMMON MOLE OF THE EASTERN UNITED STATES. U. S. Dept. Agr., Farmers' Bul. 588, 10 p., illus. 1914.

stunted roots if of suitable age are readily salable. Cultivated roots as a rule attain greater size than wild ones of the same age, but on account of their more rapid growth they are harder and denser than the wild roots, and if harvested before they are about 5 years old they will lack in flavor and quality.

Beds should rarely be dug for market until about the sixth year and should then be taken up solidly. The replanting of the undersized or stunted roots is of doubtful value, since they frequently make little more growth. Good roots should run nearly 4 inches long and half an inch in thickness below the crown and should average about an ounce in weight in the fresh state.

Roots may be dug at any time after growth ceases in September, but mid-October is regarded as the most favorable time. They should be carefully washed or shaken free of all adhering soil, but not scraped or scrubbed, as it is important to preserve the natural dusky color of the skin with its characteristic annular markings.

The older roots possess the most substance and when properly cured realize the highest prices. In recent years a demand for ground ginseng has established a market for young roots, which are preferred for milling on account of their hard, flinty texture.

Drying is best effected in a well-ventilated room heated by a stove or a furnace. It has long been customary to start drying between 60° and 80° F. and after a few days to increase the temperature to about 90°, but some experienced growers now recommend that drying start between 100° and 110° and as soon as the roots are wilted that the temperature be reduced to about 90°.

The roots are spread thinly on lattice trays or shelves made of wire netting and are frequently examined and turned, but must always be handled carefully to avoid breaking the forks or marring the surface. Roots measuring more than 2 inches in diameter will need to be dried for about six weeks, but smaller roots may be properly dried in less time. In all stages of curing, especially in noticeably damp weather, particular care should be taken to see that the root does not mold or sour, as any defect will greatly depress the selling price. On the other hand, overheating should be avoided, as it tends to discolor the surface and spoil the texture of the interior. Once well cured, the roots should be stored in a dry and airy place, secure from vermin, until ready for sale.

DISEASES

Cultivated ginseng is frequently subject to severe attacks of a number of blights, wilts, and rots, the development of which appears to be especially favored by the crowding of the plants, excess of water in the soil, and lack of proper ventilation.

In their natural state the plants as a rule are thinly scattered on the forest floor under advantageous conditions of ventilation and soil drainage, the normal action of tree roots playing no inconsiderable part in the latter condition, and diseases, of which there are several, are likely to remain quite local in effect; but under the crowded conditions of commercial culture they tend to spread and may cause material injury. Errors in fertilization and soil treatment are also frequent causes of injury and by weakening the resistance of the plants further invite the inroads of disease.

Farmers' Bulletin 736, entitled "Ginseng Diseases and Their Control,"³ treats of the symptoms, cause, and control of the various diseases of the ginseng plant, and prospective growers especially will find much useful information in its pages.

YIELD AND VALUE OF THE CROP

The yield of cultivated ginseng varies greatly and depends largely upon the suitability of the conditions under which the crop is grown and upon the skill and experience of the grower. It has been estimated that the roots from a bed measuring 4 by 16 feet, if dug when 6 years old, should weigh about 10 pounds when dry. Yields of dry root from well-managed plantings appear to be at the rate of a ton to the acre, although much larger yields are frequently reported.

Ginseng has long been valued by the Chinese for medicinal use, though rarely credited with curative virtues by the natives of other countries. The dried roots have been exported from the United States in increasing quantities since the early years of the eighteenth century, the prices rising as the wild supply diminished from about 40 cents a pound in the early years of its collection to \$19 a pound for the best qualities during 1926.

The cultivation of native ginseng, stimulated by its increasing scarcity and the rising prices, began in an experimental way about 1886 and for a time developed slowly. It is estimated that in 1901 a little less than 20 acres of ginseng were under cultivation in the United States, and of the root produced but a small quantity went into the market. In recent years the industry has attained such proportions that the output of cultivated roots appears to be considerably greater than that collected from the forests.

When cultivated ginseng first appeared on the market it sold at prices considerably higher than those paid for the wild root, but about 1904 the price declined to a figure less than that commanded by wild ginseng and since that time has continuously remained at a lower level. The preference in the Chinese markets for wild ginseng over the American cultivated root appears responsible for the difference in the prices offered for wild and cultivated ginseng in the markets of the United States.

A negligible quantity of ginseng is consumed by Chinese residents of North America, and a trifle has been used by manufacturers of domestic medicine, leaving practically the sole outlet for ginseng with the Koreans and Asiatic Chinese. The domestic prices, exports, and valuation of American ginseng from 1900 to 1926, inclusive, are shown in Table 1.

THE OUTLOOK FOR THE INDUSTRY

The future success of cultivated ginseng in North America will be determined to a great extent by the attitude of the growers. If the lessons taught by the experience of the preceding 25 years are heeded, the mistakes of the past need not be repeated and many obstacles which have heretofore hampered the progress of the industry can be removed.

³ WHETZEL, H. H., ROSENBAUM, J., BRANN, J. W., and MCCLINTOCK, J. A. GINSENG DISEASES AND THEIR CONTROL. U. S. Dept. Agr. Farmers' Bul. 736, 23 p., illus. 1916.

TABLE 1.—*Domestic prices, exports, and value of American ginseng from 1900 to 1926, inclusive*

Year	Domestic prices (per pound) ¹				Exports ²		
	Wild root		Cultivated root		Pounds	Total value	Average value per pound
	High	Low	High	Low			
1900	\$6.10	\$2.75	\$7.00	\$4.00	160,901	\$833,710	\$5.18
1901	8.75	3.75	10.00	5.75	149,069	801,672	5.38
1902	6.35	3.00	8.00	3.00	154,063	856,515	5.55
1903	7.50	4.00	7.50	5.25	151,985	796,008	5.23
1904	8.10	5.00	8.00	7.00	131,882	851,820	6.45
1905	7.50	6.00			146,576	1,069,849	7.29
1906	7.50	6.00	7.00	4.00	160,949	1,175,844	7.30
1907	7.00	5.00	6.25	3.00	117,696	813,023	6.90
1908	7.00	4.50	6.25	4.00	154,180	1,111,994	7.21
1909	8.00	5.40	7.25	5.00	186,257	1,270,179	6.82
1910	8.00	5.50	7.25	5.00	192,406	1,439,434	7.48
1911	7.50	5.00	7.00	5.00	153,999	1,088,202	7.06
1912	9.00	5.00	7.50	3.00	155,308	1,119,301	7.20
1913	10.00	6.00	6.50	3.00	221,901	1,665,731	7.50
1914	11.50	6.00	8.00	3.00	224,605	1,832,686	8.15
1915	9.50	4.50	7.00	2.00	103,184	919,931	8.91
1916	11.00	5.00	6.50	3.00	256,082	1,597,508	6.23
1917	14.00	6.00	7.00	2.50	198,480	1,386,203	6.98
1918	19.00	9.50	9.00	3.00	259,892	1,717,548	6.60
1919	23.00	13.00	12.50	3.00	282,043	2,057,260	7.29
1920	23.00	10.00	12.00	3.00	160,050	1,875,348	11.71
1921	12.00	6.50	8.00	1.00	181,758	1,507,077	8.29
1922	16.00	7.00	12.00	2.00	202,722	2,394,993	11.51
1923	18.00	12.00	15.00	3.00	148,385	2,245,258	15.13
1924	16.50	11.00	14.00	2.00	167,318	2,399,926	14.35
1925	15.00	7.50	13.00	2.00	138,131	1,668,221	12.07
1926	19.00	10.00	13.00	3.00	³ 180,262	³ 2,640,488	14.65

¹ Prices for 1900 to 1906 were obtained from dealers in Cincinnati, Ohio; prices for 1907 to 1926 were compiled from Hunter-Trader-Trapper.

² From Annual Reports of Foreign Commerce and Navigation of the United States.

³ From Monthly Summary of Foreign Commerce of the United States, December, 1926.

The industry still suffers from the disrepute into which it was brought through exaggerated claims made by many dealers in seeds and nursery stock with regard to the possibilities for unusually large profits in the growing of ginseng. Although ginseng is a comparatively unimportant product in this country, it has a place among minor crops of recognized value. For every dollar's worth of ginseng exported in 1926 there were produced in this country about \$10 worth of peanuts, \$6 worth of onions, \$16 worth of strawberries, \$3.65 worth of asparagus, and \$1.84 worth of cranberries.

In comparison with other crops the market outlook for ginseng is small, consequently the industry affords an opportunity only for a limited number of persons without danger of its becoming overcrowded. Since yields of the dry root from well-managed plantings appear to be at the rate of a ton to the acre, less than 100 acres of mature ginseng could very readily supply 191,884 pounds of roots, which is the average exportation for the last 10 years. This would represent total plantings of nearly 600 acres, as it requires at least six years to grow marketable roots from seed.

The Chinese market formerly absorbed ginseng in quantities considerably in excess of the average exportations for the two decades just past. As shown in Table 2, the number of pounds exported during the last 10 years is less than half of the exports for the 10 years 1860-1869, inclusive, while the average price per pound for the 10 years 1917-1926 is nearly 12 times as great as it was some 60 years ago.

TABLE 2.—*Exports and value of American ginseng for the periods indicated, from 1860 to 1926, inclusive*

Periods of years	Pounds	Value	Average value per pound
1860 to 1869.....	4, 149, 445	\$3, 902, 209	\$0. 94
1870 to 1879.....	4, 041, 727	4, 537, 008	1. 12
1880 to 1889.....	3, 457, 294	6, 771, 830	1. 95
1890 to 1899.....	2, 163, 302	7, 843, 888	3. 62
1900 to 1909.....	1, 513, 558	9, 610, 614	6. 34
1910 to 1919.....	2, 047, 800	14, 823, 781	7. 24
1920 to 1926.....	1, 178, 620	14, 671, 311	12. 45

Although the exports of ginseng are now considerably smaller than in some previous years, the prices paid for the root at the present time are relatively high, and a continuance of the demand for American ginseng may reasonably be expected.

The evident preference of the Chinese for the wild root and the unsatisfactory state of the general market for cultivated ginseng have caused grave doubts as to the future prospects of the industry. These doubts will probably be realized unless growers give more attention to the production of the type of root desired by the Chinese trade. In the future, growers should strive for quality of product and not for quantity of production, as has been the all too common practice in the past. There is always a ready sale for the cultivated roots which closely resemble the wild in quality and condition, and prudent growers will not fail to adopt the wild root as the standard of future production. The elimination of the poorer grades of cultivated American ginseng which are now found in the markets would tend to insure more uniform prices for the root and to lessen the danger of depressing the market through overproduction.

ORGANIZATION OF THE UNITED STATES DEPARTMENT OF AGRICULTURE

June 18, 1929

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